REMARKS

Claims 16-20 and 24-25 are pending. Claims 1-15 and 21-23 are currently canceled. Claim 16 is currently amended, and claims 24-25 are added by this amendment. Reconsideration of the application is requested.

§ 103 REJECTIONS

Claims 16, 17, 19 and 20 stand rejected under 35 USC § 103(a) as being unpatentable over US Patent No. 6,362,020 ("Shimoda") in view of US Patent No. 3,890,547 ("Keck") and US Patent No. 4,952,281 ("Akira").

Claim 18 stands rejected under 35 USC § 103(a) as being unpatentable over Shimoda in view of Keck and Akira, as applied to claims 16, 17, 19 and 20 above, and further in view of either US Patent No. 6,626,343 ("Crowley") or US Patent No. 6,820,671 ("Calvert").

Independent claim 16

Independent claim 16 has been amended to further claim: "*wherein the radiused section of the web is oriented substantially horizontally in the third portion of the web path.*"

Support for this amendment to claim 16 can be found at least in FIGS. 1-2A of the originally-filed present application, and the accompanying descriptions. Claim 16 has also been amended to correct minor editorial errors.

Shimoda teaches a method of removing curl from a belt-like substrate, such as stainless steel, by inducing a plastic deformation in the belt-like substrate by passing it through a curl corrector, particularly, a cylindrical roller type curl corrector, as shown in FIG. 7. As the belt-like substrate is passed through the curl corrector, "the weight of the substrate 704 itself causes each roller to exert the external stress to effect the plastic deformation" (*Shimoda*, col. 7, lines 14-16). As a result, Shimoda is using the weight of the belt-like substrate itself and the force of gravity to cause a material such as stainless steel to overcome its relatively low yield strength to cause some plastic deformation in the belt-like substrate.

On the contrary, the present application discloses a method of inducing a plastic deformation in a web of indeterminate length that could be applicable to a variety of materials (i.e., a variety of types of materials having a range of densities and yield strengths). The method includes inducing a plastic strain in a web by passing the web through a portion of a web path that causes the web to be formed into a radiused section to cause plastic deformation. The present application does not require additional external forces, such as gravity, to effect the plastic deformation. Rather, the web of amended claim 16 is passed through a portion of the web path "*to form a radiused section in the web having an effective radius, wherein the radiused section of the web is oriented substantially horizontally in the third portion of the web path.*"

Shimoda does not teach or describe any methods or devices that would allow the belt-like substrate to be plastically deformed without using the weight of the belt-like substrate itself and the force of gravity. Furthermore, one of ordinary skill in the art would not have thought to have modified Shimoda by turning the curl corrector shown in FIG. 7 on its side, because there would have been no reasonable expectation of success in doing so.

Keek teaches a machine in which a flexible material is passed through two sections of a machine, and a series of mercury switches mounted on a structure which is tilted in response to the position of a loop of material between the sections. Similar to Shimoda, the "loop" portion of the web is oriented substantially vertically in the device taught by Keek and relies at least partially on gravity and the weight of the material itself to form the loop between the two sections of the machine.

Akira teaches an apparatus (e.g., curl straightening apparatus 13 in FIG. 1) for straightening curls produced in spliced sheets in correspondence with the change in the diameter of an incoming winding roll. Akira teaches controlling curl by using a logical equation to predetermine the amount of decurling needed based on the diameter of the incoming winding roll. Akira specifically decurls a sheet by applying a decurler bar to the sheet between two backup rolls. The wrap angle of the sheet on the decurler bar is adjusted based on the results of the calculation of an optimum wrap angle using the logical equation by relatively changing both the backup rolls and the decurler bar (*Akira*, col. 2, lines 48-63).

Furthermore, as can be seen from the figures (e.g., FIGS. 2-4(F)) Akira teaches adjusting the wrap angle of the spliced sheets (and therefore residence time) around the small fixed radius decurler bar 31. Adjusting the wrap angle, and therefore residence time, around the small fixed radius roller is very different from "*controlling the effective radius*," as claimed in claim 16.

In addition, as shown in FIGS. 2-4(F), Akira discloses wrapping the spliced web around a decurler bar, and the portion of the spliced web that is wrapped around the decurler bar is oriented substantially vertically.

For at least these reasons, neither Keck nor Akira cure the deficiencies of Shimoda et al. in teaching or suggesting all of the limitations of amended claim 16.

For at least the reasons discussed above, withdrawal of the 35 U.S.C. §103(a) rejections of claims 16-20 is respectfully requested.

Dependent claims 17-20

Claims 17-20 are each ultimately dependent upon amended claim 16, and are therefore allowable based upon amended claim 16, and upon other features and elements claimed in claims 17-20 but not discussed herein.

In summary, the rejection of claims 17-20 under 35 USC § 103(a) has been overcome and should be withdrawn.

NEW CLAIMS

Claims 24-25 are hereby added to further claim that which the Applicant regards as the invention. Support for new claim 24 can be found at least in FIGS. 1-2A of the originally-filed present application, and the accompanying descriptions. Support for new claim 25 can be found at least in FIGS. 1-1A of the originally-filed present application, and the accompanying descriptions.

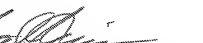
The Applicant respectfully submits that claims 24-25 are patentable over Shimoda, Keck, and the other cited references, taken alone or in any combination. Accordingly, the Applicant respectfully requests allowance of claims 24-25.

CONCLUSION

In view of the amendments and remarks presented herein, Applicants respectfully submit that the claims as amended are in condition for allowance. Applicants request that the Examiner telephone the undersigned agent of record in the event a telephone discussion would be helpful in advancing the prosecution of the present application.

Respectfully submitted,

October 31, 2007
Date

By: 
Nicole J. Einerson, Reg. No.: 57,973
Telephone No.: 651-736-4235

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833